predetermined length of the capillary channel to illuminate the volume of sample in said predetermined length and a detector for detecting fluorescent light emitted by particles in said volume of sample excited by the illumination impinging upon particles in said predetermined length.

Claims 1-3, 5, 8 and 34 are being rejected as being fully anticipated by Goix (WO 98/57152). The Examiner has erroneously concluded that this reference teaches drawing sample containing particles through the channel. However, a careful reading of the reference shows that it teaches the use of a pump such as syringe pump for injecting a test sample through a capillary. There is an important and non-obvious difference between these two methods of causing sample to flow through the capillary. By drawing sample into the capillary and past the impinging light beam, very small volumes of sample are required, only that small volume of sample which is required to give a meaningful count of particles. In contrast, in the prior art apparatus and other apparatus a larger volume of sample than that required for analysis is needed in order to fill the pump and associated apparatus. In Applicant's apparatus the sample is drawn directly out of a sample vial or container into and through the capillary. A second and non-obvious advantage is the fact that in the prior art either a disposable pump is required to prevent cross contamination or mixing of the sample, or in the alternative a thorough washing of the pump is required between sample analyses. In contrast, Applicant draws the sample into the or suspended end of the capillary directly from the sample vial or container, avoiding any mixing or cross contamination. Claim 1 calls for a pump connected to the first end of the channel for drawing sample into the second end of the channel. This arrangement is not suggested in the primary reference or in any of the secondary references. It is submitted the foregoing is a non-obvious patentable improvement in the cytometry art.

Claim 2 is more specific in specifically calling for a capillary tube. Claim 3 specifies that the channel is cylindrical and when read in connection with the claims from which it depends is clearly patentable over the art. Claim 4 provides an additional advantage in that the use of a square capillary tube with a rectangular passage avoids any focusing effect of a round capillary tube and therefore provides a substantially uniform beam through the capillary tube. Claim 6 calls for an additional detector to detect scattered light and when read in connection with the claim from which it depends defines patentable subject matter. Claims 8-11 are more specific and are all dependent upon claim 1 and when read in combination with claim 1 define a novel

combination not suggested by the prior art. Claim 34 is dependent from claim 1 and is more specific in that it provides for a capillary channel of predetermined cross sectional area. Claim 35 is more specific in calling for the optical system associated with the novel apparatus of claim 1. Claims 36 and 37 are deemed patentable when read in combination with claim 1.

In view of the foregoing it is submitted that the application is now in condition for allowance.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

The Commissioner is hereby authorized to charge any fees associated with this communication to our Deposit Account No. 50-2319 (Order No. A-69516/AJT (463032-23)).

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the claims:

1. (Amended) A particle analyzing apparatus for analyzing a sample comprising:

an elongated capillary channel having a predetermined internal cross-sectional area, said channel having first and second ends,

a pump connected to [one] the first end of the capillary channel for drawing sample into the [other] second end of the capillary channel and through the capillary channel to cause particles to flow along said capillary channel,

a light source for illuminating a predetermined [analyzing volume of sample in] length of the capillary channel to illuminate the volume of sample in said predetermined length, and

at least one detector for detecting fluorescent light emitted by particles in said volume of sample excited by the illumination impinging upon particles in said predetermined length.

4. (Amended) A particle analyzing apparatus as in claim 2 in which the capillary channel is rectangular.

5. (Amended) A particle analyzing apparatus as in claim [1] 2 including [a] an additional detector for detecting all particles flowing along said capillary tube.

6. (Amended) A particle analyzing apparatus for analyzing a sample as in claim 5 in which said [particle] additional detector detects light scattered by particles in said predetermined [analyzing] length.

7. (Amended) A particle analyzing apparatus as in claim 5 in which said at least one detector detects a change in impedance caused by said flowing particles.

9. (Amended) A particle analyzing apparatus for analyzing a sample as in claim 8 including [a particle] an additional detector for detecting light scattered by the particles in said [analyzing] volume.

34. (Amended) A particle analyzing apparatus as in claim 1 in which the [predetermining] predetermined internal cross-sectional area of said capillary channel is such as

to cause substantially all particles to singulate as they pass through the [analyzing] illuminated [channel] length.

35. (Amended) A particle analyzing apparatus as in claim 1 [in which said at least one detector means for detecting fluorescent light emitted by particles in said predetermined volume includes:] including:

means for gathering fluorescent light emitted by particle in said illuminated [volume] length,

a beam splitter for receiving said gathered light and reflecting light above a predetermined wavelength and passing light below said predetermined wavelength, and

in which said at least one detector includes:

a first detector for receiving the transmitted light and providing a first output signal for particles tagged to emit light below said predetermined wavelength, and

a second detector for receiving the reflected light and providing a second output signal for particles tagged to emit light above said predetermined wavelength.